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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,964	01/16/2001	George H. Kerby	10002893-1	4352

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EXAMINER

RUDOLPH, VINCENT M

ART UNIT PAPER NUMBER

2625

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/760,964	KERBY, GEORGE H.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vincent M. Rudolph	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8-9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano ('996) in view of Hirst ('174) and Takenaka ('279).

Regarding claim 1, Amano ('996) discloses a printer system (See Figure 1) that includes a first communication interface (engine control unit, See Figure 16, Element 106) configured to receive a humidity value from a toner cartridge (the sensor is included within the print engine for detecting humidity, See Col. 25, Line 46-49), printer components configured to electronically control a printing operation based on the humidity value (the electronic printer controller, See Figure 16, Element 103, detect the humidity sensor such that the status information is detected from the print unit, See Col. 12, Line 37-40, so that the printer components configure the printing operations for printing based on the humidity status reading, See Figure 3; Col. 25, Line 46-51).

Amano ('996) does not teach a humidity sensor and a second communication interface included within a toner cartridge to control system operation.

Hirst ('174) discloses a humidity sensor (See Figure 1, Element 46) that monitors the system changes and controls system operation (See Figure 5). The sensor is located near the toner supply in order to detect a humidity value (See Col. 4, Line 41-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to place the humidity sensor of Amano ('996) near the toner of Hirst ('174) in order to control system operation and produce, as a result, a more accurate system status reading and also provide a more proper printed output.

However, the combination of Amano ('996) and Hirst ('174) does not teach specifically placing a sensor or including a second interface on the toner cartridge.

Takenaka ('279) discloses a sensor within the toner cartridge (See Figure 1, Element 15) and a second communication interface (in order to transfer the data from the toner cartridge, See Col. 5, Line 25-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to place the sensor on the toner cartridge, such as the one taught by Takenaka ('279), and incorporate it into the monitoring system status of Amano ('996) and Hirst ('174) because by placing the sensor within the toner cartridge allows it to more accurately detect the humidity on the toner rather within a proximity of it.

Regarding claim 2, Amano ('996) discloses that the toner cartridge (See Figure 2, Element 17) is configured for coupling to the printer system (embodied

within the printer, See Figure 2, Element 1000), a second communication interface (print engine, See Figure 16, Element 105) configured to transfer the humidity value from the sensor to the first communication interface (to the print controller, See Figure 16, Element 103).

Amano ('996) does not disclose that the humidity sensor is configured to detect a humidity level and generate that value to correspond with the humidity level, but it would have been obvious to one of ordinary skill in the art to do so since Amano ('996) does disclose a humidity sensor, which is used in digital printing systems to detect humidity levels of an area and provide humidity value based on the detected humidity level (See Col. 25, Line 46-49).

Regarding claim 3, Amano ('996) discloses configuring the printer components to configure a dither matrix based on the humidity value (a dither matrix change program inside the printer components to configure the dither matrix, See Figure 3; Col. 15, Line 8-9).

Regarding claim 4, Amano ('996) discloses the printer components are configured to select the dither matrix from a plurality of dither matrices based on the humidity value (a plurality of dither matrices, or processing means, for processing an input image based on the humidity value, or input rule, See Figures 3-4 and 6; Col. 5, Line 3-4).

Regarding claim 8, Amano ('996) does not disclose receiving and electronically control the humidity value in real-time, but it would have been known to one of ordinary skill in the art to work in real-time. The electronic laser printer of Amano ('996) would have been known to one of ordinary skill in the art

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to update the printer information at the same rate as it is received, wherein a rapid rate of data processing is one characteristic of laser printing systems. It also would have been known to one of ordinary skill in the art for the humidity sensor to provide humidity data in real-time in order to provide the real-time laser printing system with accurate system information.

Regarding claim 9, Amano ('996) discloses the printer components are configured to produce monochrome copies (a black toner cartridge, See Figure 14, Element 220Bk, that enables the printing system to produce print outputs in monochrome, See Col. 18, Line 37-41).

Regarding claim 19, the rationale provided in the rejection of claim 2 is incorporated herein. In addition, Amano ('996) discloses toner for a printer system (toner cartridge, See Figure 14, Element 220Bk, includes toner that is stored in the toner cartridges, See Col. 18, Line 40-41).

Claims 5, 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano ('996) in view of Hirst ('174) and Takenaka ('279) as applied to claims 1, 3 and 19 above, and further in view of Allen ('094).

Regarding claim 5, Amano ('996) discloses that the printer components are configured to scale the dither matrix based on the humidity inputs so that the dither matrix is scaled based on a humidity value (the dither matrix is scaled on the status input, See Col. 13, Line 58-65).

Amano ('996) does not disclose the relationship of a toner humidity level to a response curve to predict toner consumption and the resultant toner level.

Allen ('094) discloses that the relationship of a toner humidity level to a response curve to predict toner consumption and the resultant toner level (within a system for monitoring ambient system information including the sensing of humidity, See Figure 2, Element 33; Col. 5, Line 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include the prediction of toner consumption and resultant toner level, such as the one disclosed within Allen ('094), and incorporate it into the printer system of Amano ('996) because it provides quicker dither matrix selection by using a quick lookup of system status predictions, such as toner consumption values, on the response curve.

Regarding claim 7, Amano ('996) does not disclose the printer components are configured to determine a humidity range that corresponds to the humidity value.

Allen ('094) discloses enabling the printer components to be configured to determine a humidity range corresponding to the humidity value (by using a response curve, See Col. 5, Line 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a printer component that determines a humidity range, such as the one disclosed by Allen ('094), and incorporate it into the printer system of Amano ('094) because this allows the printer components to properly determine a range based on the curve near the humidity value.

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Regarding claim 20, the rationale provided in the rejection of claim 7 is incorporated herein. In addition, the printer system of claim 7 corresponds to the toner cartridge of claim 20 and performs the steps disclosed herein.

Claims 10-13, 15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano ('996) in view of Hirst ('174), Takenaka ('279) and Maruta ('369).

Regarding claim 10, the rationale provided in the rejection of claim 1 is incorporated herein. In addition, Amano ('996) discloses reconfiguring the printer components if the humidity value has changed (changed in the dither matrix alter how the job is printed, which results in altering the components and physical parts of the printer to print differently, See Figure 3; Col. 13, Line 37-40).

Amano ('996) does not disclose a humidity value changing after at least one of a set number of copies and a set number of power cycles.

Maruta ('369) discloses that humidity over a number of copies change enough to affect toner concentration (by checking it at certain time periods allows it to see if humidity has changed enough to affect the toner concentration, See Figure 9; Col. 9, Line 9-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a printer component for a set number of copies, such as the one disclosed by Maruta ('369) and incorporate it into the method of operating a printer system of Amano ('996) because it provides a more accurate printing by being able to know and predict the toner concentration in selecting dither matrices as well as to correctly adjust printing.

Regarding claims 11-13, 15 and 17-18, the rationale provided in the rejection of claims 1-4 and 8-9 are incorporated herein. In addition the printer system of claims 1-4 and 8-9 corresponds to the method of claims 11-13, 15 and 17-18 and performs the steps disclosed herein.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano ('996) in view of Hirst ('174), Takenaka ('279) and Maruta ('369) as applied to claims 10 and 12, and further in view of Allen ('094).

Regarding claim 14, Amano ('996) discloses that the printer components are configured to scale the dither matrix based on the humidity inputs so that the dither matrix is scaled based on a humidity value (the dither matrix is scaled on the status input, See Col. 13, Line 58-65).

Amano ('996) does not disclose the relationship of a toner humidity level to a response curve to predict toner consumption and the resultant toner level.

Allen ('094) discloses that the relationship of a toner humidity level to a response curve to predict toner consumption and the resultant toner level (within a system for monitoring ambient system information including the sensing of humidity, See Figure 2, Element 33; Col. 5, Line 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include the prediction of toner consumption and resultant toner level, such as the one disclosed within Allen ('094), and incorporate it into the printer system of Amano ('996) because it provides quicker dither matrix selection by using a quick lookup of system status predictions, such as toner consumption values, on the response curve.

Regarding claim 16, Amano ('996) does not disclose the printer components are configured to determine a humidity range that corresponds to the humidity value.

Allen ('094) discloses enabling the printer components to be configured to determine a humidity range corresponding to the humidity value (by using a response curve, See Col. 5, Line 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a printer component that determines a humidity range, such as the one disclosed by Allen ('094), and incorporate it into the printer system of Amano ('094) because this allows the printer components to properly determine a range based on the curve near the humidity value.

### ***Response to Arguments***

Applicant discloses that there is no reference that discloses a toner cartridge comprised of a humidity sensor and a communication interface. The prior art of Takenaka, incorporated with the teaching of Amano and Hirst, discloses the claimed limitations. For example, Takenaka disclosed a sensor within the toner cartridge, See Figure 1, Element 15, and a second communication interface that is used in order to transfer the data from the toner cartridge, See Col. 5, Line 25-28. Thus, by combining it with the teaching of Amano and Hirst within the independent claims for a humidity sensor, it allows to accurately detect the humidity on the toner rather than having the sensor within proximity of the cartridge. As a result, the prior art is able to meet the claimed limitations of amended claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent M. Rudolph whose telephone number is (571) 272-8243. The examiner can normally be reached on Monday through Friday 8 A.M. - 4:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on (571) 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/12/06

VMR

Vincent M. Rudolph  
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